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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,327	02/11/2004	Jun Koyama	0756-7255	8544

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EXAMINER	
SOWARD, IDA M	

ART UNIT	PAPER NUMBER
2822	

DATE MAILED: 09/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/775,327	KOYAMA ET AL.	
	Examiner	Art Unit	
	Ida M. Soward	2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 June 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *06-15-2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to the Applicants' amendment filed June 15, 2006.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2-9 and 30-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahara (US 6,219,113 B1).

In regard to claim 2, Takahara et al. teach a semiconductor device comprising: a plurality of pixels 14 over a substrate 12; a data line driver circuit 541 over the substrate 12; and a dividing circuit 2165 over the substrate 12 (Figures 56 and 216; columns 62-63 and 126; lines 53-67, 1-23 and 1-14, respectively).

In regard to claim 3, Takahara et al. teach a semiconductor device comprising: a plurality of pixels 14 over a substrate 12; a data line driver circuit 541 comprising a plurality of NAND circuits over the substrate 12; and a dividing circuit 2165 over the substrate 12 (Figures 56 and 216; columns 62-63, 89 and 126; lines 53-67, 1-23, 48-63 and 1-14, respectively).

In regard to claim 4, Takahara et al. teach a semiconductor device comprising: a plurality of pixels 14 over a substrate 12; a data line driver circuit 541 over the substrate 12; a dividing circuit 2165 over the substrate 12 (Figures 56 and 216; columns 62-63 and 126; lines 53-67, 1-23 and 1-14, respectively).

In regard to claim 5, Takahara et al. teach a semiconductor device comprising: a plurality of pixels 14 over a substrate 12; a data line driver circuit 541 comprising a plurality of NAND circuits over the substrate 12; and a dividing circuit 2165 over the substrate 12 (Figures 56 and 216; columns 62-63, 89 and 126; lines 53-67, 1-23, 48-63 and 1-14, respectively).

In regard to claim 6, Takahara et al. teach a semiconductor device comprising: a plurality of pixels 14 over a substrate 12, each of the plurality of pixels having a thin film transistor 155; a data line driver circuit 541 over the substrate 12; and a dividing circuit 2165 over the substrate 12 (Figures 35, 56 and 216; columns 46, 62-63 and 126; lines 49-67, 53-67, 1-23 and 1-14, respectively).

In regard to claim 7, Takahara et al. teach a semiconductor device comprising: a plurality of pixels 14 over a substrate 12, each of the plurality of pixels 14 having a thin film transistor 155; a data line driver circuit 541 comprising a plurality of NAND circuits over the substrate 12; and a dividing circuit 2165 over the substrate 12 (Figures 35, 56 and 216; columns 46, 62-63, 89 and 126; lines 49-67, 53-67, 1-23, 48-63 and 1-14, respectively).

In regard to claim 8, Takahara et al. teach a semiconductor device comprising: a plurality of pixels 14 over a substrate 12, each of the plurality of pixels 14 having a thin

film transistor 155; a data line driver circuit 541 over the substrate 12; a dividing circuit 2165 over the substrate 12 (Figures 35, 56 and 216; columns 46, 62-63 and 126; lines 49-67, 53-67, 1-23 and 1-14, respectively).

In regard to claim 9, Takahara et al. teach a semiconductor device comprising: a plurality of pixels 14 over a substrate 12, each of the plurality of pixels 14 having a thin film transistor 155; a data line driver circuit 541 comprising a plurality of NAND circuits over the substrate 12; and a dividing circuit 2165 over the substrate 12 (Figures 35, 56 and 216; columns 46, 62-63, 89 and 126; lines 49-67, 53-67, 1-23, 48-63 and 1-14, respectively).

In regard to claims 30-37, Takahara et al. teach the semiconductor device applied to a google type display (Figures 152-154).

However, Takahara et al. fail to explicitly teach the various functions of the dividing circuit.

In regard to dividing a signal into n signals, and imputing the n signals to n pixels among the plurality of pixels through n video input signal lines, wherein the n signals inputted into the n pixels by a timing signal supplied from the data driver circuit, simultaneously, claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function, In re Danly, 263, F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). Apparatus claims cover what a device is, not what a device does. Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990).

In regard to dividing signal into n signals, and imputing the n signals to n pixels among the plurality of pixels through n video input signal lines, wherein the n signals inputted into the n pixels by a timing signal supplied from one of the plurality of NAND circuits, simultaneously, claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function, In re Danly, 263, F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). Apparatus claims cover what a device is, not what a device does. Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990).

In regard to dividing three signals corresponding to colors R, G and B into 3n signals, and imputing the 3n signals to 3n pixels among the plurality of pixels through 3n video input signal lines, wherein the 3n signals are inputted into the 3n pixels by a timing signal supplied from the data driver circuit, simultaneously, claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function, In re Danly, 263, F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). Apparatus claims cover what a device is, not what a device does. Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990).

In regard to dividing three signals corresponding to colors R, G and B into 3n signals into 3n signals, and imputing the 3n signals to 3n pixels among the plurality of pixels through 3n video input signal lines, wherein the 3n signals are inputted into the 3n pixels by a timing signal supplied from one of the plurality of NAND circuits, simultaneously, claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function, In re Danly, 263, F.2d 844, 847, 120 USPQ 528,

531 (CCPA 1959). Apparatus claims cover what a device is, not what a device does. Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990).

In regard to dividing a signal into n signals, and imputing the n signals to n thin film transistors corresponding to n pixels among the plurality of pixels through n video input signal lines, wherein the n signals are inputted into the n thin film transistors corresponding n pixels by a timing signal supplied from the data driver circuit, simultaneously, claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function, In re Danly, 263, F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). Apparatus claims cover what a device is, not what a device does. Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990).

In regard to dividing a signal into n signals, and inputting the n signals to n thin film transistors corresponding to n pixels among the plurality of pixels though n video input signal lines, wherein the n signals are inputted into the n thin film transistors corresponding to n by a timing signal supplied from one of the plurality of NAND circuits, pixels simultaneously, claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function, In re Danly, 263, F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). Apparatus claims cover what a device is, not what a device does. Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990).

In regard to dividing three signals corresponding to colors R, G and B into 3n signals, and inputting the 3n signals to 3n thin film transistors corresponding to 3n pixels among the plurality of pixels through 3n video input signal lines, wherein the 3n signals are inputted into the 3n thin film transistors corresponding to 3n pixels by a timing signal supplied from the data driver circuit, simultaneously, claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function, In re Danly, 263, F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). Apparatus claims cover what a device is, not what a device does. Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990).

In regard to dividing three signals corresponding to colors R, G and B into 3n signals, and inputting the 3n signals to 3n thin film transistors corresponding to 3n pixels among the plurality of pixels through 3n video input signal lines, wherein the 3n signals are inputted into the 3n thin film transistors corresponding to 3n by a timing signal supplied from one of the plurality of NAND circuits, pixels simultaneously, claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function, In re Danly, 263, F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). Apparatus claims cover what a device is, not what a device does. Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was for the semiconductor device structure as taught by Takahara et al. to perform the various functions of the dividing circuit to provide a liquid crystal display device that consumes less power.

Claims 10-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahara et al. (US 6,219,113 B1) as applied to claims 2-9 and 30-37 above, and further in view of Yamazaki (6,115,097).

Takahara et al. teach all mentioned in the rejection above.

However, Takahara et al. fail to teach the data line driver circuit comprising a shift register, NAND circuits, a level shifter and a buffer; the substrate comprising glass; and the thin film transistor comprising polycrystalline silicon film.

Yamazaki teaches a data line driver circuit comprising a shift register, NAND circuits, a level shifter and a buffer (column 10, lines 33-36); a substrate 401 comprising glass (Figure 4A, column 3, lines 51-54); and a thin film transistor comprising polycrystalline silicon film (column 1, lines 26-29).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was modify the semiconductor device structure as taught by Takahara et al. with the semiconductor device having a data line driver circuit comprising a shift register, NAND circuits, a level shifter and a buffer; and a substrate comprising glass as taught by Yamazaki to provide a semiconductor device capable of being used as a display of portable video cameras and portable business equipment, and further of various types of information terminal equipment (column 1, lines 44-52).

Response to Arguments

Applicant's arguments concerning the functional language filed 06-15-2006 have been fully considered but they are not persuasive. The claimed invention is drawn to a

semiconductor device structure. What is patentable is the structure of the semiconductor device not what the structure does.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ida M. Soward whose telephone number is 571-272-1845. The examiner can normally be reached on Monday - Thursday 6:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra V. Smith can be reached on 571-272-2429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

IMS
September 2, 2006

IDA M. SOWARD
PRIMARY EXAMINER